

STUDIO LIGHT

A MAGAZINE OF INFORMATION
FOR THE PROFESSION

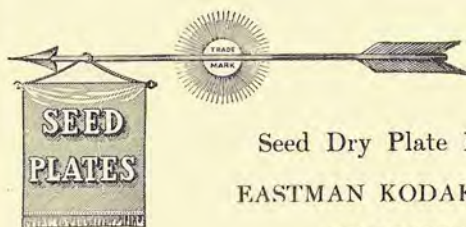


PUBLISHED BY THE
EASTMAN KODAK COMPANY
ROCHESTER NEW YORK

APRIL 1919

Superiority of Seed results
established the Seed standard
of plate quality.

Seed 30 Gilt Edge—the ideal
plate for portraiture.



All Dealers'.

Seed Dry Plate Department,
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

First put quality into
your negatives—
then use

ARTURA

and keep that quality
in your prints.



All Dealers'.

ARTURA DEPARTMENT,

EASTMAN KODAK CO.,

ROCHESTER, N. Y.



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 11

APRIL 1919

No. 2

WHAT FILM MEANS TO YOU

Photography has made a most wonderful advance in the last five years, and in making this statement we do not have in mind the wonderful accomplishments in war photography.

Portrait photography has taken the longest forward step since wet plates gave way to dry plates, and Eastman Portrait Film has made the step possible.

Just as there were limitations in wet plate photography which the dry plate overcame, so there are limitations in dry plate photography which film overcomes.

Printing processes have improved wonderfully, but a print can never do more than reproduce what the negative has recorded. And so long as the negative material has limitations, just so long will the photographer be bound to work within these limitations.

It is in the handling of difficult lightings that Portrait Film

immediately demonstrates its superiority over glass plates, and it is in the making of difficult lightings that the photographer is enabled to break away from the commonplace.

If we were explaining the above point to the public—those unfamiliar with photography—it might be difficult to make our point clear, for, to the layman, the most commonplace lightings are those natural lights of the home in which he sees his family and friends, while to him, the difficult lightings would be the unnatural ones in which his family and friends are usually pictured under the photographer's skylight.

It is easily understood why home portraiture met with the instant approval of the picture-buying public and why Portrait Film met with the instant approval of the home portraitist.

With plates the photographer

was compelled to modify the conditions of light he encountered in the home—with film he could cast aside all semblance of studio effects and photograph his subjects as he found them, retaining the home atmosphere in his pictures.

The results were often startling to the photographer. His success in one difficult lighting gave him the incentive to create new effects. Purely conventional lightings became the exception rather than the rule, with the result that customers were pleased with the great variety and naturalness of home portraits.

The newness and freshness of home portrait work on film set a new standard for the work of the studio photographer. And Portrait Film has enabled him to meet it—to give full play to his originality—to give a new note of interest to his portraits and added prestige to himself as a photographer.

When the photographer has reached the point where he has exhausted the possibilities of his working material, there is no incentive for him to change to another material unless it offers newer and broader possibilities. This is exactly what Portrait Film does.

Watch the work of the man who uses film—ask him why he uses film, and what film enables him to do that he cannot do with plates. And when you have

found his real reason for changing from plates to films, when he has told you of the ease with which he can reproduce the most difficult lightings, the full range of gradations from sunlight to shadow—of how he can even photograph into the light without fear of halation, then ask him something of the convenience of film.

There is a very real and tangible reason for the continued doubling and trebling of film sales, for the continually growing list of prominent photographers who are film users and for the way in which they stick to film, once they have used it.

It isn't the convenience or the economy of film that has made its success, though these are contributing factors. It is film quality—the quality that has broadened the entire field of photography—the quality that will enable you to be a better and more versatile workman.



ELON

We make it—

we know it's right.





EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



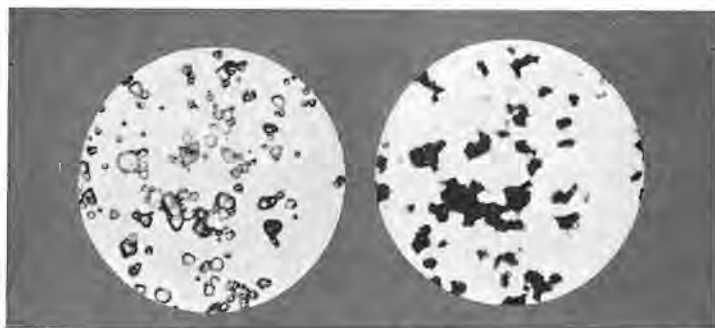


Fig. 1

STRUCTURE OF THE DEVELOPED IMAGE

Every photographer has had a desire to see the grains of silver as they appear in an emulsion and as they appear in the negative after development. Experiments in our Research Laboratory have given us some excellent photomicrographs which are of unusual interest.

In Figure 1, the photographs, taken through a very powerful microscope, show crystals of silver bromide before development, on the left, and on the right, some crystals that have been changed into metallic silver by development.

The crystals before development are transparent except where they are seen sideways or where their edges appear darker. After development the clear yellow silver bromide is turned into a black coke-like mass of silver

in exactly the same position as the crystals from which it was formed.

You never see these silver grains with the naked eye. When you look at a negative it appears perfectly smooth, but under a small degree of magnification it begins to show an appearance of graininess. What you really see is large masses or clumps of grains. With an increase in the magnification you also see the smaller clumps of grain and finally, at a very high magnification, you see the grains themselves. Figure 2.

The clumps of grains seen under low magnification are made up of grains which are in several layers. This can be seen by making a photograph looking down on the surface and then cutting through it and making a photograph of the cross section to see how the grains lie one below the other. In Fig. 3A it will be seen that the image is as much as six



EASTMAN PORTRAIT FILM, ARTURA PRINT

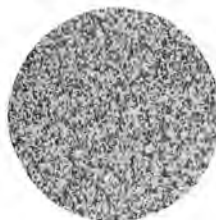
Made directly against the light

*From a Demonstrator's
Negative*





Enlarged 20 diameters



Enlarged 100 diameters



Enlarged 400 diameters



Enlarged 900 diameters

Fig. 2



Fig. 3A—Cross Section

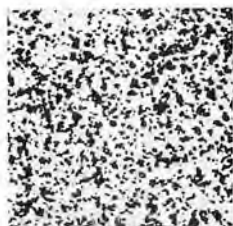


Fig. 3B

grains deep, so that many of the clumps of grains seen in Fig. 3B are not made up of grains in the same layer, clumped together, but grains in different layers entirely separated.

The distribution of developed grains in the depth of the film is interesting. It might be thought that with short exposures the image would be on the surface of the film and that as exposure was increased the light would penetrate farther into the film making the grains in the lower layers more and more developable. This sometimes seems to be the case, but with most emulsions it is not, as the illustrations in Fig. 4, cut from a film, will show.

All four of these examples were fully developed so that any effect development might have



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*





Fig. 4—No. 1



Fig. 5—No. 1

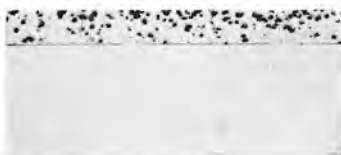


Fig. 4—No. 2



Fig. 5—No. 2

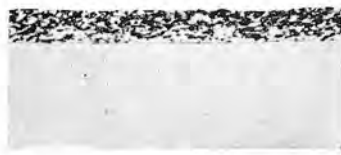


Fig. 4—No. 3



Fig. 5—No. 3

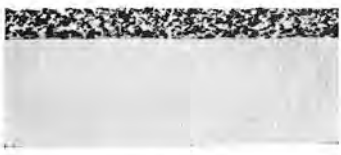


Fig. 4—No. 4

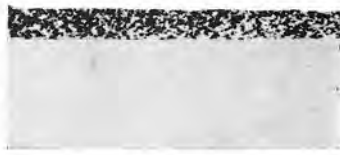


Fig. 5—No. 4

on the result is eliminated. They show that the grains are exposed in all parts of the film to an almost equal extent, though in the second and third examples there is a slight tendency for the image to be more on the top of the film.

While we do not know for a certainty, it looks as though the emulsion contains grains of vari-

ous degrees of sensitiveness, and the more sensitive grains are made developable first.

During development, however, there is an appreciable effect due to the penetration of the developer into the film. This is shown in Fig. 5. It is seen that at the beginning of development, only the silver grains near the surface are developed, and then as the



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



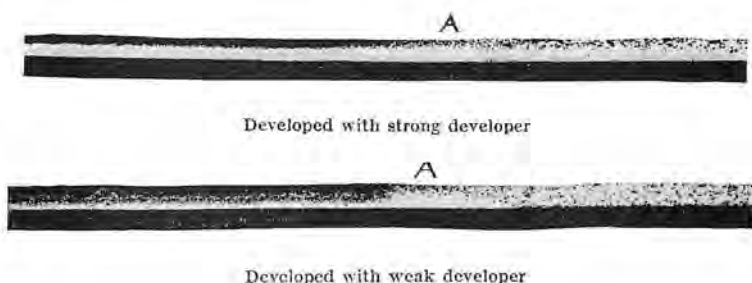


Fig. 6

developer penetrates into the film it develops more and more deeply into it.

In the case of a strong developer this effect is accentuated because a strong developer will develop the surface to good density before it has penetrated through the emulsion. A weak developer will penetrate at the same rate as a strong developer but will not develop so rapidly, so that with a strong developer there is a tendency for the image to be confined to the surface of the emulsion, and with the weaker developer, for it to penetrate through the whole emulsion.

This effect is plainly shown in Fig. 6 where two photographs are shown of the edge of a developed image, the image being shown as the dark part on the left, while on the right is the slight deposit of grains due to fog which is always more or less present.

In the upper picture the image

was developed with a very strong developer, while in the lower picture it was developed with a much weaker developer. It will be noted that the weak developer has penetrated right through the image to the back, while the strong developer has only penetrated about half the thickness of the emulsion, although care was taken to develop the images to the same apparent density.

There is a curious effect shown in these photographs at the point marked A. It is seen that at the edge of the developed image the fog grains are not developed in the lower part of the film but appear as if they had been eaten away. There is no doubt that the reason for this is that the bromide liberated during development of the heavy image has prevented the fog grains close to the edge of the image from developing. In extreme cases this will sometimes surround a dense image with a distinct line.



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



TO MAKE A WOODEN WASHING AND FIXING TANK FOR PORTRAIT FILM

It is a difficult matter to find large tanks of suitable proportions on the market, but a wooden tank for fixing and washing film negatives can be easily built in accordance with the plans herewith. The tank may be built of one inch cypress, white pine or white-wood.

Referring to the accompanying diagrams, "Fig. 1" shows the top view of a three section tank. This will accommodate either 8x10 or 5x7 film developing hangers. The width of the box is $10\frac{3}{4}$ inches inside measurement and each of the three compartments will take 16 8x10 developing hangers or 48 in the three compartments, and by removing crossbars over 50 hangers can be handled at one time. The crossbars are spaced $7\frac{3}{4}$ inches apart which gives room

for the 5x7 developing hangers. These crossbars should be $1\frac{1}{2}$ inches wide, otherwise the ends of the hangers will hit each other when being moved back and forth. The box will accommodate seventy-two 5x7 hangers. The crossbars should also drop down into the tank $2\frac{1}{2}$ inches, so as to extend below the shoulder of the developing hanger and prevent it from sliding sideways. A three compartment tank built of one inch material measures $28\frac{1}{4}$ inches in length, $12\frac{3}{4}$ inches in width and 12 inches high outside measurements.

"Fig. 2" shows a side elevation of the tank. The dimensions for either a washing or fixing box will be the same, but the intake and outlet openings are required for a washing tank only. However, a hole at the bottom of the box at one end with a plug may be desirable for draining off the hypo bath.

The tank can be built by a carpenter and we would suggest

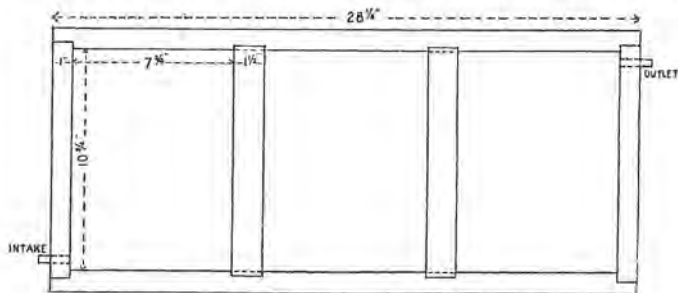


Fig. 1—Top View of Tank

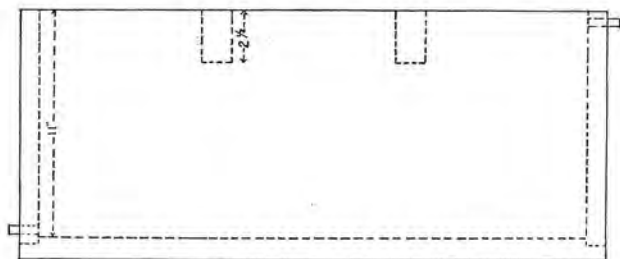


Fig. 2—Side Elevation of Tank

fastening it together with screws, using white lead in joints, and offsetting them in the manner shown in the accompanying sketch. A perspective view of the box with hangers is shown in Fig. 3.

To render wooden tanks water proof and to prevent warping they should be coated with tar,

an acid proof paint or black asphaltum varnish. A tank built in this manner is very serviceable and inexpensive to build.

If a larger or smaller tank is required, it can be built with any number of compartments. If only 8x10 films are to be handled the removable crossbars will not be required.

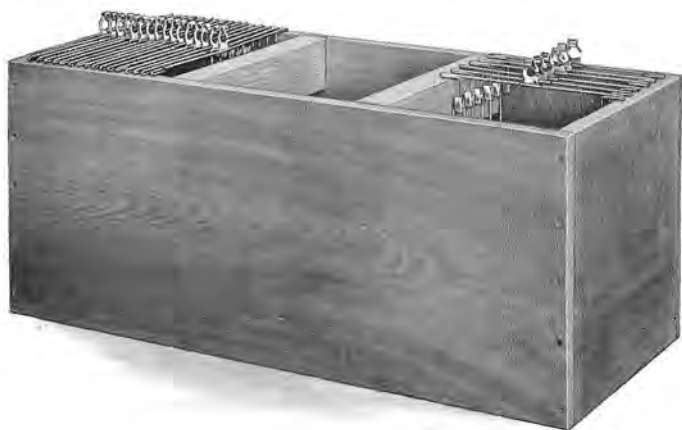


Fig. 3—The Finished Tank



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*





EASTMAN PORTRAIT FILM, ARTURA PRINT

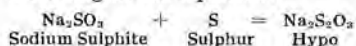
*From a Demonstrator's
Negative*



THE CHEMISTRY OF FIXATION

After development, the undeveloped silver bromide is removed by immersion of the negative or print in what is called the "fixing" bath. There are only a few substances which will dissolve silver bromide, and the one which is universally used in modern photography is sodium thiosulphate, $\text{Na}_2\text{S}_2\text{O}_3$, which is known to photographers as hyposulphite of soda, or more usually as hypo, though the name hyposulphite of soda is used by chemists for another substance.

Thiosulphate of Soda or Hypo can be made by boiling together sodium sulphite and sulphur, the sulphur combining with the sodium sulphite according to the equation:



In practice it is generally made from calcium sulphite residues, the calcium thiosulphite being then converted into the sodium salt by treatment with sodium sulphate. The hypo comes on the market in clear crystals and is usually fairly pure, any foreign substance present being more often due to accidental contamination than of a chemical nature and consisting of dirt, straw or wood dust due to careless handling. Sometimes, however, the hypo contains calcium thiosulphate, which decomposes much more readily than the sodium salt. On the whole, it is not difficult to obtain good hypo; the Eastman Tested Hypo is prepared in the form of granular crystals, easy to dissolve, and free from accidental contamination.

In the process of fixation the

silver bromide is dissolved in the hypo by combining with it to form a sodium silver thiosulphate. Two of these compound thiosulphates exist, one of them being almost insoluble in water, while the other is very soluble. As long as the fixing bath has any appreciable fixing power the soluble compound only is formed.

Fixing is accomplished by means of hypo only, but materials are usually transferred from the developer to the fixing bath with very little rinsing so that a good deal of developer is carried over into the fixing bath, and this soon oxidizes in the bath, turning it brown, and staining negatives or prints. In order to avoid this the bath has sulphite of soda added to it as a preservative against oxidation, and the preservative action is, of course, greater if the bath is kept in a slightly acid state. In order to prevent the gelatine from swelling and softening it is also usual to add some hardening agent to the fixing bath so that a fixing bath instead of containing only hypo will contain in addition sulphite, acid, and hardener.

If a few drops of acid such as sulphuric or hydrochloric acid are added to a weak solution of hypo, the hypo will be decomposed and the solution will become milky owing to the precipitation of sulphur. This is because the acid converts the sodium thiosulphate into the free thiosulphuric acid,

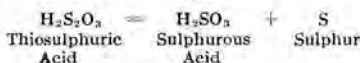


EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



and this substance is quite unstable, decomposing into sulphurous acid and sulphur according to the equation:



The change of thiosulphate into sulphite and sulphur is reversible, since, if we boil together sulphite and sulphur we shall get thiosulphate formed, so that while acids free sulphur from the hypo, sulphite combines with the sulphur to form hypo again. Consequently, we can prevent acid decomposing the hypo if we have enough sulphite present, since the sulphite works in the opposite direction to the acid. An acid fixing bath therefore is preserved from decomposition by the sulphite, which also serves to prevent the oxidation of developer carried over into it. The developer which is carried over into the fixing bath is, however, alkaline and consequently a considerable amount of acid is required in a fixing bath which is used for any length of time. If only a small amount is present, it will soon be neutralized by the developer carried over. We are therefore in a difficult position because we require a large amount of acid present, and yet the fixing bath must not be strongly acid. The solution of the difficulty is found by taking advantage of the fact that there are some acids which

are very weak in their acidity and yet can neutralize alkali in the same way as a strong acid, so that a large amount of these acids can be added without making the bath so acid that sulphur is precipitated.

The strength of an acid depends upon the fact that when it is dissolved in water some of the hydrogen contained in it dissociates from the acid and remains in the solution in an active form, and the acidity of the solution depends upon the proportion of the hydrogen which is dissociated into this active form. The amount of alkali which the acid can neutralize, however, depends upon the total amount of the hydrogen present, and not on the dissociated portion only. The strongest acids are the mineral acids, such as sulphuric and hydrochloric, while the weakest acids are the organic acids, which are made from vegetable products, such as citric and acetic acids, which are very weak acids indeed.

Since in fixing baths what we require is a large amount of a weak acid, the best acid for the purpose is acetic acid. Citric or tartaric acid can also be used but not so satisfactorily.

Acetic Acid in its dilute form is prepared as vinegar by the fermentation of alcohol, the stronger acid being made from acetate of lime, which is prepared either by neutralizing vinegar with chalk or more usually by neutralizing with lime



EASTMAN PORTRAIT FILM, ARTURA PRINT

*From a Demonstrator's
Negative*



the crude acetic acid prepared by the destructive distillation of wood. There are three commercial strengths of acetic acid: that known as glacial acetic acid, which contains about 99% of the acid, and which is called glacial because at moderately low temperatures it freezes to a solid, a solution containing 80% of the acid, and the 28% commercial acetic acid. It is not usual for acetic acid to contain any impurities which are likely to be harmful.

Citric Acid is obtained chiefly from lemons, the juice of the lemon being neutralized with chalk or lime, forming calcium citrate, from which the citric acid is prepared by decomposition with sulphuric acid. Citric acid is frequently adulterated and care should be taken that only pure crystals are used; a specially pure product is packed by the Eastman Kodak Company.

When acetic or citric acids cannot be obtained for the fixing bath, the only substitute which appears to be generally available is bisulphite. Bisulphite of soda, NaHSO_3 , is intermediate between sulphite of soda and sulphurous acid, and is therefore equal in acidity to a mixture of equal proportions of these two substances. It makes a satisfactory acid fixing bath but does not give quite so good a reserve of available acid in the bath as acetic acid does. This is of importance particularly in connection with the hardening agent used in the fixing bath.

The commonest hardening agent is potash alum, the alum having the property of shrinking and tanning gelatine.

Alum is a compound sulphate of sodium, potassium or ammonium and aluminum. If the hydrogen in sulphuric acid be replaced by potassium, we get potassium sulphate, K_2SO_4 , while if it be replaced by aluminum, we get aluminum sulphate, $\text{Al}_2(\text{SO}_4)_3$. The aluminum sulphate combines with other sulphates to form the alums, of which the commonest are potassium alum and ammonium alum. Sodium alum does not crystallize well, but the potassium and ammonium salts crystallize in large, clean crystals and are convenient in use. Ammonia alum has the disadvantage that if it becomes alkaline, ammonia may be liberated, which, of course, cannot happen with potash alum, but as potassium salts are difficult to obtain, ammonia alum has generally taken the place of potassium alum. Alum is among the substances specially included in the list of Eastman Tested Chemicals, since its purity is of considerable importance for its photographic use.

Chrome Alum, which is often used in the place of ordinary alum, does not contain any aluminum in spite of its name. It is a compound sulphate of potassium sulphate or ammonium sulphate with chromium sulphate, of which the formula is $\text{Cr}_2(\text{SO}_4)_3$, the chromium taking the place of the aluminum present in aluminum sulphate. Chrome alum is prepared commercially in large quantities and of a high degree of purity. It occurs in violet crystals soluble in water, its solution in cold water being violet but going green on heating, owing to the change in the composition of the salt. Chrome alum has greater hardening power than ordinary alum and is often used in place of it for fixing baths, its only disadvantage being its greenish color, which makes the fixing bath look somewhat dark. Chrome alum crystals lose water on keeping,

thus increasing in strength weight for weight.

When acetic acid cannot be obtained and the fixing bath is made up with bisulphite it is necessary to substitute chrome alum for ordinary alum. The reason for this is that when a solution of aluminum alum containing sulphite loses its acidity, as it may in a fixing bath, due to the carrying over of the developer, basic aluminum sulphite is precipitated, and this makes the solution muddy, so that if a fixing bath is made with ordinary alum and bisulphite, it will show a precipitate after a time which looks like sulphur, but which is really this basic sulphite of aluminum. Chromium does not form the corresponding compound very easily, so that by using chrome alum with bisulphite a fixing bath is obtained which can take the place of the acetic acid fixing bath with good results.

Formalin is a solution of formaldehyde, a gas having a very strong odor. The commercial solution contains 40% of formaldehyde and has the property of hardening gelatine very powerfully, a 5% solution rendering the gelatine of a film completely insoluble in boiling water in less than a minute. Formalin is, however, somewhat unpleasant to use and there is considerable danger of producing reticulation with it, so that it is only employed when extreme hardening is required and chrome alum does not harden the film sufficiently.

It is important not to overwork a fixing bath, because as

the fixing bath becomes saturated with silver the film or paper will carry this silver into the wash water with it and if not properly washed the silver salt will remain in the finished photograph and will decompose into silver sulphide in time, producing stains. A gallon of the standard strength fixing bath will fix a gross of 8x10 prints, and when these have been fixed a fresh bath should be used.



With
Portrait Film

difficult lightings become so simple that you are given the incentive to create new effects—to give full play to your originality.

It is such work that marks your progress—that gives you prestige.

Your Children's Portraits

The fleeting charm
of childhood,
caught by the lens
and held in the
photograph.



THE PYRO STUDIO

Line cut No. 262. Price, 30 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. E. K. CO.

ELON

THE BETTER MADE—AMERICAN MADE

Monomethyl Paramidophenol Sulphate

Released from large government orders for Elon, which we gladly gave priority, we are now able to furnish Elon, in limited quantities, to the photographer.

Elon has served so well at home and in France—in X-Ray, Aviation, Motion Picture and "Still" photography—that this chemical, during the war, was entirely consumed in war photography.

Elon can now be supplied by your dealer, but we request that purchases be made in limited quantities for present use only, as conservation of the supply is still necessary.

We make it—we know it's right.

THE PRICE

| | |
|------------------------------------|--------|
| 1 oz. bottle | \$1.65 |
| $\frac{1}{4}$ lb. bottle | 6.40 |

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

*We Buy Old Negatives—
either Portrait Film or Plates*

We purchase lots of 100 pounds or more of Portrait or Commercial Film negatives, if in good condition and shipped in accordance with instructions. Before making any shipments, however, please secure packing instructions, prices and further particulars.

We purchase glass negatives of standard sizes from $4\frac{1}{4} \times 6\frac{1}{2}$ to 14×17 , provided same are in good condition and packed as per our instructions.

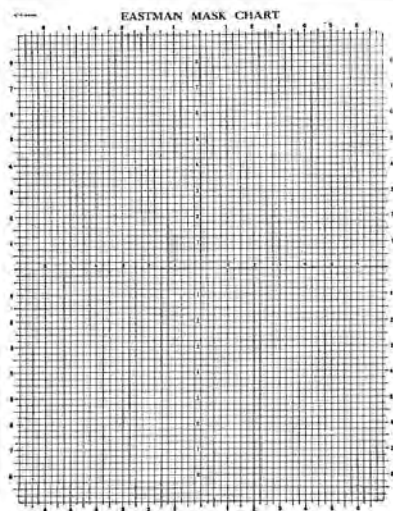
We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

For full instructions, shipping labels, prices, etc., address:

EASTMAN KODAK CO.

Department S.

ROCHESTER, N. Y.



Manufactured by EASTMAN KODAK COMPANY, Rochester, N. Y.

Eastman Mask Chart

Saves money because it saves time. Every sheet of the masking paper is accurately ruled ready for you to cut a mask of any size up to the chart's capacity.

Follow the lines with a sharp knife and a perfect mask is cut in less time than it takes to tell about it.

Eastman Mask Charts

| | | |
|----------|-----------|--------|
| 5 x 7, | per dozen | \$0.10 |
| 8 x 10, | " " | .15 |
| 11 x 14, | " " | .30 |

Eastman Form Holder

It holds the form while you do the trimming—prevents the slipping of forms and makes trimming easy.

Slip the print and form under the binding edge, press down on opposite end.

The cutting board is hardened zinc.



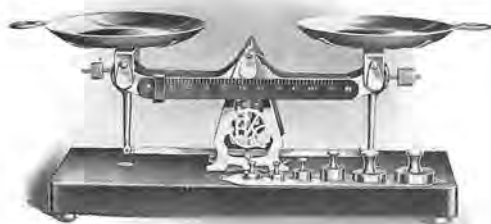
Eastman
Form Holder
\$1.75

EASTMAN KODAK COMPANY,

All Dealers'.

ROCHESTER, N. Y.

An accurate scale with
obvious advantages



The Eastman Studio Scale

Specially designed for the convenience of the professional photographer.

There are no small, loose weights—just a sliding weight on a beam and the larger weights for ounces and fractions of ounces, avoirdupois. All bearings are of hardened steel; the beam is black with white markings; all other parts are nickeled.

THE PRICE

Eastman Studio Scale \$4.50

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.



The war put military discipline into photography. Fixed temperature of solutions and fixed time of development were required in war photography to insure uniform results.

THE EASTMAN THERMOMETER

Indispensable in tank development where time and temperature are the governing factors. Accurate, convenient.

Eastman Thermometer . \$.75

THE EASTMAN TIMER

A split-second timer, with large dial, plainly marked and easily read. Prints may be timed with the accuracy and uniformity necessary for good results. Runs 30 hours without re-winding.



The Eastman Timer . . . \$4.00

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.



The markings are plain—the advantages are equally plain.

Eastman Visible Graduate

facilitates the mixing of solutions in the dark-room.

The graduations are plainly seen, even in a dim light.

THE PRICE

| | | | |
|---------------------------|--------|---------|--------|
| Eastman Visible Graduate, | 2-oz. | | \$.25 |
| “ “ “ | 4-oz. | | .35 |
| “ “ “ | 8-oz. | | .50 |
| “ “ “ | 16-oz. | | .75 |
| “ “ “ | 32-oz. | | 1.00 |

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.



Cirkut Photography

The photographer who owns a Cirkut Camera, has an unlimited field in which to exercise his originality in creating new and profitable business.

Quick returns may be realized from Cirkut group pictures of conventions, graduating classes, and other similar public gatherings which occur in every locality. Panoramic views of railroad, or real estate development; farm and timber lands; mining properties; manufacturing plants, and views of towns and cities, are always in demand.

The Cirkut Photographer can make his negative as long or as short as may be required to produce the best result. He can include any angle of view—even the complete circle of 360 degrees—all on one daylight loading Eastman Film.

*Ask your dealer or write us
for Cirkut Method Book.*

Folmer & Schwing Department

EASTMAN KODAK COMPANY

Rochester, N. Y.

A suggestion



THE SIGNET—RM size

'Tis a mounter for a horizontal print made from an 8 x 10 negative printed on 11 x 14 paper and trimmed to the pleasing proportion 11 x 12.

It looks more value than prints on 8 x 10 paper—puts this grade of picture in the same price class as upright 11 x 14 portraits for Family, Wedding and other groups and Home Portraits.

Will bring you new, profitable prices.

Feature it for the coming "Wedding Picture" Season.

Sample of both colors—Swiss Grey and Brown—
for ten 2c. stamps. Sample Offer No. 2007.

TAPRELL, LOOMIS & COMPANY

(EASTMAN KODAK COMPANY)

CHICAGO, ILLINOIS

The Leading Card Novelty House of America.

The enlargement on

ARTURA CARBON BLACK

Gets more out of your negative
than the contact print—retains
all the contact print quality.



ARTURA DEPARTMENT,
EASTMAN KODAK CO.,
ROCHESTER, N. Y.

All Dealers'.

The more difficult
the lighting, the
more apparent the
advantages of

Portrait Film

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'